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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 441
Disciplina	539.7
Soggetti	Nuclear physics Heavy ions Nuclear fusion Elementary particles (Physics) Quantum field theory Statistical physics Dynamical systems Observations, Astronomical Astronomy—Observations Astrophysics Nuclear Physics, Heavy Ions, Hadrons Nuclear Fusion Elementary Particles, Quantum Field Theory Complex Systems Astronomy, Observations and Techniques Astrophysics and Astroparticles
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Nota di contenuto	Electron scattering -- Elementary nuclear excitations studied with electromagnetic and Hadronic probes -- Probing nucleon and nuclear structure with high-energy electrons -- Relativistic theory of the structure of finite nuclei -- Semiclassical description of the relativistic

nuclear mean field theory -- Photonuclear reactions -- Notes on scaling and critical behaviour in nuclear fragmentation -- The continuum in nuclei -- Spherical shell model, a renewed view -- High spins and exotic shapes -- Heavy ion scattering problems; regular and chaotic regimes -- Deterministic chaos in heavy-ion reactions -- Nuclear level repulsion, order vs. chaos and conserved quantum numbers -- Nuclear physics and nuclear astrophysics with radioactive nuclear beams.

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Sommario/riassunto

Written in a pedagogical way, the articles in this book address graduate students as well as researchers and are well suited for seminar work. Subjects at the forefront of nuclear research, bordering other areas of many-particle physics, such as electron scattering at different energy scales, new physics with radioactive beams, multifragmentation, relativistic nuclear physics, high spin nuclear problems, chaos, the role of the continuum in nuclear physics or recent calculations with the shell model are presented. It is felt that the topics treated in this book address the main future lines of development of nuclear physics.

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